Commentaries and Rejoinder to “Marketing and Firm Value: Metrics, Methods, Findings, and Future Directions”

Linking Marketing Actions to Value Creation and Firm Value: Insights from Accounting Research

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Srinivasan and Hanssens (2009) offer an ambitious research agenda for establishing the links among marketing actions, value creation, and observed market values. They describe the research technologies available for exploring these links and summarize the current understanding of these links based primarily on evidence from the marketing literature. We complement Srinivasan and Hanssens’ work by highlighting the insights, opportunities, and challenges that accounting researchers have encountered in addressing highly related questions.

This commentary proceeds as follows: We summarize accounting researchers’ broad interest in intangible investments and its potential applicability to the research agenda that Srinivasan and Hanssens propose. Next, we discuss accounting research that links marketing actions to intermediate measures of value creation. We follow this with a discussion of the theoretical foundations for and what can be learned from value-relevance research designs. Then, we discuss short-window studies. Finally, we suggest potential tests of the appropriateness and completeness of the market’s reaction to marketing actions and present evidence from the accounting literature that is relevant to the question whether managers can influence investors’ understanding of marketing actions.

MOTIVATION FOR EXAMINATION OF INTANGIBLE INVESTMENTS IN ACCOUNTING RESEARCH

Although the well-established theory of efficient markets predicts that actions that create value will be appropriately reflected in observed market values on a timely basis, the degree to which this prediction holds empirically is not obvious, given ample evidence of the existence of frictions that may delay investors’ efficient processing of value-relevant information. In the case of intangible investments, such as marketing, these frictions include the long time horizon for the benefits of value-creating activities to be realized and the inherent riskiness of such activities, both of which complicate the task of forecasting the future implications of current marketing actions. In addition, sparse public information about the nature and projected benefits of such activities leaves investors with little basis for assessing the valuation impacts of such activities.

Marketing and accounting researchers have a mutual interest in understanding these links. While marketing researchers are concerned with whether marketing activities are sufficiently rewarded by the capital market, accounting researchers are concerned with whether financial reporting provides sufficient information for investors to make optimal capital allocation decisions. If marketing actions create value but such value creation is not systematically reflected in prices, the implication is that the financial reporting regime is not supplying investors with sufficient information about the sources of value creation, resulting in suboptimal capital allocation. As Srinivasan and Hanssens argue, suboptimal capital allocation in the external capital market can lead to suboptimal internal investment decisions, such that managers respond to the lack of external reward for long-term value creation by curtailing such activities. This form of myopic behavior is a realistic possibility, given evidence from Bushee’s (1998) study that the level of sophistication and the trading patterns of a firm’s investor base influence the likelihood that managers will cut research-and-development (R&D) investment to avoid earnings declines. In addition, 79% of chief financial officers who Graham, Harvey, and Rajgopal (2005) survey expressed a willingness to curtail discretionary expenditures, such as advertising, to avoid missing short-term earnings benchmarks.

THE LINK BETWEEN MARKETING EFFORTS AND IMMEDIATE FINANCIAL OUTCOMES

In addition to the large body of marketing literature relating a firm’s advertising spending to immediate sales response (e.g., Hanssens, Parsons, and Schultz 2001; Vakratsas and Ambler 1999), several economic studies demonstrate similar effects (e.g., Boyer 1974; Clarke 1976; Grabowski 1976; Lambin 1976). Other research indicates that the relationship between advertising and sales depends on the type of product and competition. For example, Netter (1982) documents that the relationship between an individual firm’s advertising and its sales and profitability depends on the advertising of other firms in the industry.

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particularly in the nondurable goods industry. Berndt and colleagues (1994) show that the benefits of industry-expanding advertising expenditures are long-lived, while the benefits of rivalry-inducing advertising expenditures dissipate at a fast pace for firms in the antitrust drug industry.

Iitner and Larcker (1998) do not link marketing effort per se but rather an intermediate quantity created by marketing effort—customer satisfaction—to customer retention, revenue, and revenue changes for a telecommunications company. They use proprietary business unit data from a leading financial services firm to document that branches with higher levels of customer satisfaction scores experienced higher subsequent revenues, higher revenue per customer, and greater success in attracting new customers.

**THE LINK BETWEEN MARKET AND FIRM VALUE: VALUE-RELEVANCE STUDIES**

**Accounting-Based Valuation Models**

The Fama–French multifactor model, to which Srivivasan and Hanssens devote considerable discussion, permits estimation of the expected return on a firm’s equity based on its sensitivity to (nondiversifiable) market risk factors. As the authors point out, the Fama–French model provides a useful basis for estimating the unexpected portion of the market’s response to various news events, including the announcement of various marketing initiatives. The traditional dividend discount model combines a security’s expected rate of return with estimates of the future cash flow payoffs to the security’s holders (i.e., dividends) to derive the security’s value. Specifically, as Equation 1 depicts, the dividend discount model characterizes the market value of a security at time $t$ as the present value of expected future dividends discounted at the expected rate of return:

$$\text{Market Value of Equity}_t = \sum_{\tau=1}^{\infty} \frac{(1+r)^{-\tau}}{\tau!} \text{E}_t \left[ \text{Dividends}_{t+\tau} \right],$$

where $r$ is the expected rate of return on equity and $E$ is an expectations operator.

In an efficient market, observed market values are expected to be equal to their expected values based on the dividend discount model. Accounting researchers interested in examining the extent to which intangible resources can explain cross-sectional variation in equity values have relied on the residual income accounting-based valuation model, which is an alternative representation of the traditional dividend discount model that permits an explicit role for both recognized and unrecognized assets. Ohlson (1995) and Feltham and Ohlson (1995) derive the residual income model by combining the dividend discount model with the following basic accounting relationship:

$$\text{Residual Income}_t = \text{Net Income}_t - \text{Dividends}_t - \frac{E}{r} \text{Market Value of Equity}_t.$$  

Because Equation 2 can be rearranged and dividends can be stated as a function of beginning and ending net assets and current net income, combining Equation 1 with Equation 2 yields the following model, in which market value is expressed as a function of current and forecasted future accounting variables:

$$\text{Market Value of Equity}_t = \text{Recorded Value of Net Assets}_t$$

$$+ \sum_{\tau=1}^{\infty} \frac{(1+r)^{-\tau}}{\tau!} \text{E}_t \left[ \text{ResidualIncome}_{t+\tau} \right],$$

where

$$\text{Residual Income}_t = \text{Net Income}_t - r \times \text{Recorded Value of Net Assets}_{t-1}.$$  

As Equation 3a illustrates, residual income is defined as recorded earnings for the period (i.e., net income) less a charge equal to the firm’s expected rate of return multiplied by its net assets as of the beginning of the period. If the balance sheet represents a comprehensive listing of the firm’s assets and the assets are recorded at their respective fair values (i.e., the present values of cash flows the assets are expected to generate), the recorded value of net assets equals the fair value of net assets, and the present value of the forecasted stream of future residual income is equal to zero. The present value of the forecasted stream of future residual income will be nonzero and, typically, positive if the firm’s recorded assets are reflected at less than their fair value (i.e., as a result of conservative accounting) and/or if certain assets are not recorded at all. Because intangible investments are not typically reflected as assets on U.S. firms’ balance sheets, they are a potential source of future residual income.

Empirical specifications attempting to establish a link between unrecorded intangible assets typically take the following form, which is an adaptation of Equation 3:

$$\text{Market Value of Equity}_t = a_0 + a_2 \text{Recorded Net Assets}_t$$

$$+ a_3 \text{Intangible Assets}_t + e.$$  

Researchers interested in establishing a link between intangible assets and firm value inspect $a_2$ to determine whether it is significantly greater than zero. This model is most useful as a joint test of the relevance and reliability of an intangible asset. That is, if the asset is reflected in market value, it is assumed that investors consider it relevant for valuation. Moreover, the ability to document a statistically significant relationship between the asset and the market value suggests that the future benefits of the asset (at least as perceived by investors) are sufficiently reliable to be incorporated into market prices. The insights of this model are informative in establishing whether various types of intangible assets should be included in the formal financial reporting model. Using a specification similar to Equation 4, Iitner and Larcker (1998) find a positive relationship between customer satisfaction at the industry level as listed in the American Customer Satisfaction Index and industry-level market values, Greenhalgh and Rogers (2006) find that the number of trademarks is incrementally value relevant for U.K. firms from 1989 to 2002, and Barth and colleagues (1998) find a positive relationship between firm-specific brand value estimates published by Financial World and firm-level share prices.

1For mathematical derivation and details, see Ohlson (1995).
We structured the foregoing discussion to make clear that though prior studies have used a variety of empirical specifications, they have a common conceptual basis. We note that some accounting valuation studies estimate undeflated versions of Equation 4 (Barth and McNichols 1994; Ittner and Larcker 1999; Landsman 1986), while other accounting studies deflate Equation 4 to reduce heteroskedasticity in cross-sectional estimation. Such studies have used “sales” (Hirschey and Weygandt 1985), “number of shares outstanding” (Barth et al. 1998), and “value of tangible assets” (Simon and Sullivan 1993) as alternative deflators. The Tobin’s q and market-to-book value models that Srinivasan and Hanssens cite in Table 2 can also be considered variants of Equation 4. The market-to-book value model uses book value of equity as the deflator, and the Tobin’s q model isolates gross (rather than net) recorded assets and deflates by the replacement costs of a firm’s assets.

**Empirical Challenges**

However, there are limitations to the model. First, given the near impossibility of completely specifying all the potential sources of value of a firm, the correlated omitted variables problem in levels regressions is significant. This problem can be addressed to some extent by transforming Equation 4 into a changes specification. If the correlated omitted variables are stationary from period to period, they should not pose problems in interpreting the value relevance of intangible investments if changes rather than levels are analyzed. For example, in assessing the value relevance of brands, Barth and colleagues (1998) augment their levels regressions with a changes specification. Jacobson and Mizik (2009a, b) use a changes specification to examine the value relevance of the American Customer Satisfaction Index and, in contrast to Ittner and Larcker (1998), find evidence of value relevance only for computer and Internet firms.

Second, there is the problem of arriving at the appropriate proxies for intangible assets. Researchers must decide whether to use amounts expended on intangible investments or fair value estimates of intangibles. As we pointed out previously, amounts expended on intangible investments do not translate directly into future cash flows. Thus, amounts expended on intangible investments are imperfect proxies for the value such investments are expected to generate. Moreover, measures based solely on expenditures do not capture differences in success rates across firms and thus are suitable only for establishing the average degree of value relevance for a class of intangible investments but not for exploring firm-specific differences in the success of intangible investments. Prior research has shown a positive association between advertising expenditures and stock prices, indicating that the financial market believes that, on average, advertising is a value-enhancing activity (see, e.g., Chauvin and Hirschey 1993; Hirschey 1982; Hirschey and Weygandt 1985).

Some researchers construct a hypothetical intangible asset measure based on observed expenditures and relate this to market values. Researchers using this approach must determine an appropriate amortization pattern that corresponds to the pattern of expected benefit. Lev and Sougiannis (1996) determine industrywide amortization rates for R&D expenditures by regressing current operating profit against current and lagged R&D expenditures. In the context of advertising and marketing, the lack of uniformity in firms’ classification of and reporting on advertising expenditures complicates the task of arriving at measures of unamortized advertising costs that can be compared cross-sectionally. Specifically, the expenses included in the number a firm reports as “advertising” in its 10-K report are not prescribed by the Securities and Exchange Commission. One firm might include only media spending; another might include media spending, promotion spending, marketing research expenses, and so on. Furthermore, until 1994, all manufacturing firms were required to report advertising. After 1994, reporting advertising became optional for even manufacturing firms.

Lack of transparency about what each firm is including in advertising expenditures hinders researchers’ ability to identify which marketing actions create value. In addition, differences across firms in the classification and reporting of advertising and marketing activities lead to measurement error when using reported advertising amounts as a basis for constructing measures of unamortized cost. Although measurement error weakens the power of tests, if differences across firms in the classification and reporting of advertising and marketing activities are not random but rather are caused by systematic factors that are not identified and controlled for in the research design, the researcher faces the potentially more severe problem of biased inferences.

Some research attempts to incorporate direct measures of the fair values of intangible investments. Fair value estimates reflect expectations of the future cash flows attributable to the intangible investments. Conceptually, it is difficult to isolate the fair value of any intangible asset because it usually generates its cash flows in combination with other assets. As we discussed previously, Barth and colleagues (1998) use estimates published by Financial World as their fair value proxies. Another source of fair value estimates is purchase price allocations used in connection with mergers and acquisitions, in which the acquirer must decompose the consideration amount into specific assets and liabilities acquired. Marketing-related intangibles are among those that are required to be recognized separately. Kimbrough (2007) uses fair value estimates from purchase price allocations to assess how well the market incorporates the value of R&D capital. Kallapur and Kwan (2004) document positive associations between brand assets recognized by U.K. firms and market values of the acquiring firms.

**THE LINK BETWEEN MARKETING EFFORTS AND FIRM VALUE: SHORT-WINDOW STUDIES**

While value-relevance studies provide insight into whether investors care about marketing-related intangibles (subject to the aforementioned caveats), short-window return studies (what Srinivasan and Hanssens refer to as “stock return response modeling” and “event study
approach” in Table 2) allow for more direct causal inferences about the source of the information on which investors rely. Moreover, as Srinivasan and Hanssens point out, short-window studies are less susceptible to criticisms about correlated omitted variables than value-relevance studies. Short-window studies are based on the notion that returns in excess of expected returns based on the firm’s return-generating pattern can be attributed to the event of interest. Srinivasan and Hanssens discuss the many ways expected returns can be specified. Over short windows, the measurement of abnormal returns is not likely to be sensitive to alternative ways of calculating expected returns. Thus, rather than the Fama–French three- or four-factor model, researchers often use market-adjusted returns (which simply deduct the market return from a firm’s raw returns) or returns based on the market model approach, in which a firm’s expected returns are based on parameters from a regression of a firm’s returns against market returns for some period before the event of interest.3

Although the event study approach is straightforward and has been successful in yielding useful insights into accounting research, differences between the settings examined by accounting researchers and those of interest to marketing researchers are likely to influence whether marketing researchers will have the same success using this methodology. Specifically, accounting researchers have devoted the event study methodology to examining the market’s response to earnings announcements, which are clearly identifiable events (see, e.g., Collins and Kothari 1989; Easton and Zmijewski 1989; Francis and Ke 2006; Kormendi and Lipe 1987). The mandated nature of earnings announcements leads to large, diversified samples (because all public companies must release earnings), which enhances the power and generalizability of earnings response tests. The power of event study tests of earnings response is further enhanced by the ready availability of earnings announcement dates on commercially available databases, such as COMPUSTAT, which allows for a reasonably precise identification of the event date at low cost to the researcher.

As Chaney, Devinney, and Winer (1991) point out in their event study examination of new product introductions, most marketing phenomena, in contrast to earnings announcements, evolve gradually and do not reveal themselves as distinct events that would readily lend themselves to use of event study methodology. For example, the announcement of marketing initiatives is voluntary, and managers often undertake strategic actions without formally announcing them. Therefore, marketing researchers face a comparatively greater challenge in identifying settings when event study designs are appropriate and will yield sufficiently large samples and allow for identification of precise event dates.4 Inexact identification of the date on which a strategic initiative became known leads to lower-power tests that bias against finding that such events are informative to the market, even if they are. Marketing researchers will likely need to rely on hand-collected samples based on keyword searches of press release data sources, such as Factiva or LexisNexis.

Chaney, Devinney, and Winer (1991) also note that given the noisiness of stock price data, an event must be of sufficient economic importance for responses to the event to be detected using event study methodology. Although earnings announcements are economically important events to which capital market participants devote considerable attention, Chaney, Devinney, and Winer note that most individual marketing actions are small relative to the market value of the firm, which presents an additional challenge to marketing researchers in identifying sufficiently powerful settings to apply the event study methodology.

Because announcements of strategic initiatives likely to be of interest to marketing researchers often do not occur in isolation but rather in the context of other information events (e.g., earnings announcements), marketing researchers are likely to face the challenge of contending with confounding information, which hinders his or her ability to attribute the observed market response to the event of interest. Although confounding information is also a problem in the context of earnings announcements, its impact is diversified in the large samples used for event studies around mandatory earnings announcements under the assumption that such information is idiosyncratic across observations. In contrast, the impact of confounding information may not be so easily diversified away in the smaller samples likely available to marketing researchers for event study analysis.

In contrast to the mandated nature of earnings announcements, the voluntary nature of most information events likely to be of interest to marketing researchers means that they must exercise greater care in interpreting the results of event studies or stock return response models. Given that a firm self-selects to undertake a specific strategic action and to disclose its action, a researcher can use event study methodology to establish that the market responds to a specific event (given sufficiently powerful settings) but cannot draw inferences from a simple event study design that observed market responses to particular strategic and disclosure actions would extend to firms not represented in the sample (i.e., that all firms would have market responses similar to those observed if they undertook similar actions). To make such a conclusion requires controls for self-selection, which calls for explicit modeling of the underlying determinants of strategic and disclosure actions.5

Finally, marketing researchers are likely to face greater challenges in isolating the unanticipated news arriving to investors during an event window. As Srinivasan and

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3For example, over short windows (e.g., less than five days), Lennox and Park (2006) and Palmrose, Richardson, and Sholz (2004) define abnormal returns as market-adjusted returns, while Teets and Wasley (1996) define abnormal returns as market model returns.

4The sample sizes for the event studies that Srinivasan and Hanssens cite are as follows: Lane and Jacobson (1995): 89 observations; Johnson and Houston (2000): 191 observations; Horsky and Swynedegouw (1987): 58 observations; Chaney, Devinney, and Winer (1991): 1101 observations; Agarwal and Kamakula (1995): 110 observations; Geyskens, Gielen, and Dekimpe (2002): 98 observations; and Tellis and Johnson (2007): 421 observations. In contrast, typical earnings announcement event studies have sample sizes in the thousands. For example, Francis and Ke (2006) have a sample size of approximately 17,000 observations covering a four-year period.

5For a discussion of the necessary considerations when controlling for self-selection, see Francis and Lennox (2008).
Hanssens point out, well-specified stock response tests require a measure of the unexpected new information arriving to the capital market because this is the only information to which investors are expected to react. The existence of analyst forecasts and/or well-established time-series models allows the earnings expectation and, therefore, the earnings surprise to be specified in event studies around earnings announcements. In contrast, the ability to arrive at an expectation for marketing investments is less developed. Moreover, unexpected earnings have intuitive interpretations—positive (negative) unexpected earnings are considered good (bad) news—while unexpected marketing expenditures do not have a natural interpretation without the appropriate context (i.e., it is not clear whether marketing expenditures that exceed or fall short of prevailing expectations should be interpreted as good or bad news).

**ASSESSING THE COMPLETENESS OF THE MARKET’S VALUATION OF MARKETING INTANGIBLES**

Although event studies have the potential to provide clear evidence on whether investors respond initially to the announcement of a marketing action, they do not provide evidence on the appropriateness or completeness of the market’s initial reaction. Accounting researchers have taken two approaches to documenting the appropriateness and completeness of the market’s initial reaction: (1) examining whether the market’s assessment of the implications of the information event implicit in the observed stock price reaction is consistent with the true implications and (2) testing the profitability of trading strategies based on previously announced information.

Mishkin (1983) elaborates on testing rational expectations in macroeconomic contexts (i.e., to test whether the bond market rationally incorporates forecasted inflation and short-term interest rates). Sloan (1996) first introduced the methodology into the accounting literature to examine how well stock prices reflected the persistence of annual earnings. Sloan modeled earnings as the first-order autocorrelation process that Srinivasan and Hanssens (n. 2) describe:

\[
E_{it} = \alpha_0 + \alpha_1 E_{it-1} + \epsilon,
\]

where \(E\) is annual earnings.

The error term from this regression is unexpected earnings, and by rearranging terms, it can be expressed as

\[
\text{Unexpected Earnings}_{it} = E_{it} - \alpha_0 - \alpha_1 E_{it-1}.
\]

The next equations follow from the assumption that abnormal returns should correspond only to the unexpected portion of earnings:

(7) \( \text{Abnormal Returns} = b_0 + b_1 \text{Unexpected Earnings}_{it} + \epsilon' \), and

(8) \( \text{Abnormal Returns} = b_0 + b_1 (E_{it} - \alpha_0 - \alpha_1 E_{it-1}) + \epsilon' \).

By estimating Equations 5 and 8 jointly using maximum likelihood estimation techniques, the actual persistence of earnings in Equation 5 can be compared with the market’s perception of the persistence as reflected by \( \alpha_1 \) in Equation 8. Evidence that \( \alpha_1' \) differs from \( \alpha_1 \) indicates that the market’s assessment is not in accord with the underlying process. If marketing actions have certain predictable impacts on future earnings, the impacts could be modeled using a variant of Equation 5, investors’ understanding of these impacts could be assessed using a variant of Equation 8, and the system of equations could be jointly estimated using maximum likelihood estimation. As with the value-relevance studies, inferences from application of Mishkin’s (1983) approach can be distorted by the existence of correlated omitted variables (Kraft, Leone, and Wasley 2007).

Another way to assess the completeness of the market’s reaction is to approach market efficiency not as a binary concept but as a matter of degree. Under this notion, market prices can deviate from fundamentals in the short run but will eventually gravitate toward fundamentals over the long run. Thus, if the market systematically under- or overestimates the future implications of a current information event, portfolios can be formed on the basis of the information event, leading to trading strategies that yield predictable abnormal returns as the initial misestimation is corrected. The existence of such returns is evidence that the market did not appropriately incorporate the implications of the information event at the time it became publicly known.

The primary challenge with long-window tests of trading strategies is that they are vulnerable to criticisms that any returns generated from the trading strategy are attributable to unspecified risk factors rather than inefficient market responses to the information event. Use of state-of-the-art asset pricing models to calculate expected returns, such as the Fama–French factor model that Srinivasan and Hanssens discuss, does not insulate researchers from this criticism because it is always possible that reliable returns generated over long windows are the result of differences in risk not captured by the asset pricing model. A way to blunt this criticism is to demonstrate that the subsequent returns are clustered around subsequent information events in which the implications of the original event are resolved. For example, assume that a marketing action is value relevant because it will generate sales at some predictable future date, but investors do not fully understand the magnitude of sales that will be generated. In this case, investors will respond positively when the marketing initiative is announced, but the reaction will be incomplete. Presumably, investors will complete their response when the sales from the marketing initiative actually materialize. If the subsequent returns coincide with the announcement of subsequent sales, it is more likely that the subsequent returns will reflect an initial underreaction rather than a compensation for risk that is associated with the marketing action.

Using the aforementioned methodology, several accounting and finance studies have documented a delayed response to publicly released information. For example, Bernard and Thomas (1990) document postearnings announcement drift in which the market appears to underreact to the predictable implications of current earnings news, leading to predictable subsequent returns. Sloan (1996) documents that investors appear not to understand that the different components of earnings have different implications. With respect to intangible assets, Penman and Zhang (2002) document substantial returns to portfolios formed on the basis of the estimated magnitude of unrecorded R&D assets, suggesting that share prices do not incorporate in a timely manner the predictable value creation associated with R&D. Aboody and Lev (2000) provide evidence of substantial returns to insider trading for R&D-
increase firm visibility, is associated with higher stock mar-
ket valuations. Because investor relations activities are
related to (though distinct from) public relations activities,
these studies’ findings suggest the possibility that company
management, through its interactions with the investment
community, can correct stock market underpricing attribut-
able to underappreciation of intangible investments, such as
marketing.

CONCLUSION

This commentary provides insights from the accounting
literature that should be useful as marketing researchers
attempt to link marketing actions to firm value. Given their
institutional knowledge, marketing researchers are uniquely
suited to identify settings in which the tools that Srinivasan
and Hanssens describe and that this commentary elaborates
on are likely to yield the most fruitful insights. The results
of this stream of research will be relevant to the more
general question of how the market values intangible
investments.

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Intertemporal and Cross-Sectional Determinants of Earnings

WHAT FACTORS INFLUENCE THE DEGREE TO
WHICH THE MARKET UNDERSTANDS THE VALUE
IMPLICATIONS OF INTANGIBLE INVESTMENT?

Srinivasan and Hanssens express an interest in the role of
analysts and management in the market’s interpretation of
marketing activities. While they focus on the potential for
analysts and management to mislead investors, accounting
research suggests a role for both capital market participants
as credible sources of information in aiding investors’ inter-
pretation of intangible investment. For example, Kim-
brough (2007) demonstrates that the degree to which mar-
ket values incorporate the fair value of R&D capital is a
function of analyst following, particularly for the portion of
R&D capital that is unrecognized. This finding suggests
that analysts’ private information search activities yield use-
ful information about intangible investment.

With respect to firm-provided disclosures, Kimbrough
(2005) and Bowen, Davis, and Matsumoto (2002) show that
conference calls, which managers often provide in connection
with their earnings releases and which provide them
with the opportunity to comment on the most recent quar-
terly results and to highlight their implications for future
financial performance, lead to improved investor and ana-
lyst expectations of future earnings. Specifically, Kim-
brough shows that investors better understand the future
implications of currently announcement earnings for firms’
initiation of earnings-related conference calls, as demon-
strated by less delayed investor responses to the predictable
future implications of current earnings surprises. In a
related study, Bowen, Davis, and Matsumoto show that ana-
lysts’ forecasts of future earnings become more accurate
after managers hold conference calls in connection with
currently announced earnings. Evidence that management-
provided disclosures can lead to improved investor and ana-
lyst expectations of future outcomes suggests a potential
role for management-provided disclosures in helping
investors understand the future implications of current
marketing actions.

Srinivasan and Hanssens also express a related interest in
how public relations activities affect the investor commu-
favorable stock price reactions in response to corporate pre-
sentations made to security analysts, particularly for firms
with apparently undervalued shares. Bushee and Miller
(2007) show that the introduction of investor relations
activities, which are designed to increase the accessibility
of firm management to the investor community and to
increase firm visibility, is associated with higher stock mar-

Response Commentaries and Rejoinder 319


Financial Markets Research in Marketing

Natalie Mizik and Robert Jacobson

Not long ago, the use of financial market data was viewed as outside the area of marketing, and the interactions of marketing with the financial markets were little studied. Increasingly, marketers are better appreciating the benefits of understanding how financial market data can be used to assess the value implications of marketing constructs and studying the effects of marketing variables on the financial markets. We commend Srinivasan and Hanssens (2009; hereinafter, S&H) for taking on the daunting task of both outlining research approaches and summarizing some of the empirical findings to date. Marketing does not have a long track record of working with the financial markets theory and methods; work in this area is still evolving and, indeed, is in a state of flux. As such, the road map that S&H provide is of great value and can help shape future research in the area.

Although we have provided some of our own guidelines elsewhere (Jacobson and Mizik 2009a, b), we appreciate the opportunity to elaborate on some issues and to offer comments on the work of S&H. While we applaud S&H for highlighting a host of key considerations (e.g., the importance of working with unanticipated changes in a metric) and differ with them on some more nuanced points, in this comment, we focus on three recoccurring issues in this research domain:

1. The use of vector autoregressive (VAR) modeling in identifying financial market anomalies,
2. The limitations to working with “levels models” in valuation analyses, and
3. Working with Tobin’s q instead of the stock return metric.

Our objective is to reinforce some of the points S&H make and to open a dialogue on some other issues.

VAR Modeling for Anomalies Identification

Financial markets research in marketing has centered primarily on two key research issues: (1) valuation (i.e., establishing value relevance of marketing metrics) and (2) identifying market anomalies (i.e., mispricing) related to marketing metrics. The first research area attempts to establish the long-term performance consequences (as summarized by changes in the firm’s stock market valuation) of marketing actions and assets. Two methods—short-window event studies and longer-window stock return response models—are used in this research. In event studies, significant findings of abnormal returns following an event constitute evidence of the event’s impact on firm performance. Findings of incremental (to accounting profitability) information content (i.e., value relevance) of a metric in response models suggest that the marketing construct has long-term effects that are not fully reflected in contemporaneous accounting performance. Under the assumption of efficient markets, because the market reacts immediately and forms unbiased expectation, these methods allow for the assessment of the value implications of marketing events and constructs.

Although the second research area tends to use some aspects of the efficient markets framework, it attempts to identify anomalies (i.e., delays in market reaction to new value-relevant information). Tests of market anomalies typically link future risk-adjusted stock returns of a firm to metrics in the investors’ current information set. Some studies have argued and provided empirical evidence that the stock market may not fully and immediately appreciate consequences of strategic actions and assets. They show that a systematic long-term stock price adjustment might follow the initial reaction. A future-term price adjustment might stem from the market participants not being able to observe, not paying sufficient attention to, or not fully understanding performance implications of a firm action. In such cases, valuation models assessing contemporaneous market response would not capture the total long-term performance impact because an additional future-term effect might also exist. Nonstructural VAR models, such as the one S&H propose, are reduced form representations that can be used to examine delayed effects of marketing metrics on stock return and, as such, can assess potential marketplace mispricing.

Although it has the potential to test for anomalies, given that marketing metrics are rarely available at very high frequency, nonstructural VAR modeling is limited in the context of assessing the value relevance of marketing metrics. Because investors impound value implications into the current price of the stock, most of the effect of marketing metrics is likely reflected in the contemporaneous association. Prior research has established that financial markets react to new information very quickly, sometimes within minutes. For example, the bulk of the market adjustment and settling following announcements (e.g., earnings and macroeconomic events) occurs within 5–15 minutes (Ederington and Lee 1993; Patell and Wolfson 1984). The absence of a lagged effect in VAR modeling does not mean that the financial markets do not value a particular metric. Rather, the effect of the metric on financial valuation may have already been incorporated previously into the price of the stock.

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6For example, we argue that the four-factor risk model is not a separate type of analysis assessing value relevance but rather simply a procedure for risk adjustment in analyses that examines abnormal stock return.
7Some recent research has also begun to investigate second-order effects (e.g., marketing’s impact on volatility and risk), which is a methodologically and substantively distinct research area. Because of space constraints, we focus on the marketing–return relationship and leave discussion of our views on this developing research area for another occasion.

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Because empirical findings of mispricing run counter to efficient markets theory, they tend to be aggressively challenged. The view is that if the anomaly is truly present, investors will use it as a trading rule and, by doing so, will dissipate it. Fama (1998) claims that most empirical findings of mispricing do not stand up to close scrutiny and are not robust to sensitivity checks. It is our view that anomalies may exist, but it is incumbent on the researcher to undertake the needed sensitivity checks (e.g., alternative risk calculations, alternative return calculations) to better substantiate the validity of the finding.

Although studying market anomalies and mispricing is valuable, VAR-based analysis may have limited usefulness if the goal is to establish empirical regularities or generalizations. Market participants have an incentive to trade on and, thus, dissipate anomalies. As such, even those advocating a behavioral approach to financial markets (e.g., Shiller 2002) point out that anomalies may sometimes disappear or even switch signs over time. Empirical findings of mispricing have a history of being time or context specific (Schwert 2003).

Finally, we note that the notation S&H use in their Equation 4 is a bit confusing. In their discussion, they clearly state that their modeling is based on separate time-series VAR models for each firm. However, by using panel data notation in Equation 4 (i.e., by referring to firm i and period t in the same equation), it may give the unintended impression that the S&H discussion applies to panel data VARs as well. Indeed, it does not. Panel data VAR modeling typically requires a different estimation methodology than the one S&H detail (see, e.g., Holtz-Eakin, Newey, and Rosen 1988). Panel data VARs can help overcome the data requirements needed in strictly time-series VARs, but they also bring up several other issues requiring methods and considerations not addressed by S&H.

THE LIMITATIONS OF WORKING WITH LEVELS MODELS IN VALUATION ANALYSES

Several studies attempting to assess the financial market implications of marketing variables run “levels models,” which link a highly autocorrelated financial performance metric (e.g., market value, Tobin’s q, market-to-book ratio) to explanatory factors that are also autocorrelated (e.g., book value; earnings; intangible asset measures, such as customer satisfaction or a brand attribute). These regressions are used not just in the marketing literature but also across disciplines. For example, as Gow, Ormazabal, and Taylor (2009) note, market value models form the basis for an entire and ongoing research stream in accounting. Although an extensive literature stream has discussed the econometric limitations of these levels models, they continue to be estimated, published in journals, and their apparent implications given credence.

As S&H astutely note (p. 300), levels models “have limited value, from both a theoretical and a methodological perspective.” Ordinary least squares (OLS) estimation assumes that the error terms are independent and identically distributed. When both the error term and the independent variable are positively autocorrelated, least squares estimates of the standard errors are biased and understate the true standard errors. The conventional t-statistic does not have a standard normal limiting distribution, which invalidates the use of t-distribution to test the hypothesis of statistical significance. In the presence of autocorrelated series, the number of occasions with |t| greater than 1.96 greatly exceeds 5%. The higher the autocorrelation in the series, the greater is the probability of observing a t-statistic above |1.96| (i.e., the greater is the extent to which OLS standard errors understate the true standard errors).

Although spurious regression is most widely discussed in a pure time-series context, it also comes into play in analyses of panel data. For example, Kao (1999) shows that although the spurious regression problem is unrelated to the number of cross-sectional observations, it increases with the number of time-series observations.9 Petersen (2007) notes that as the number of periods of data used in the analysis doubles, OLS assumes a doubling in the amount of information. However, the amount of information increases by a factor less than two if the explanatory factors and the error exhibit autocorrelation. Consider the extreme case in which both the independent variable and the error term are perfectly autocorrelated. In this scenario, each additional period provides no additional information and has no effect on the true standard error of the estimate. However, the standard errors estimation from OLS assumes that each additional year provides N (the number of cross-sections in the panel) additional independent observations, and the estimated standard error shrinks accordingly, albeit incorrectly. As such, many of the statistically significant findings reported in the literature are nothing more than artifacts of the spurious regression phenomena.

An approach to dealing with spurious regression problems is to compute standard errors that explicitly account for the autocorrelation in the residual. For example, both Petersen (2007) and Gow, Ormazabal, and Taylor (2009) advance the use of cluster-robust standard errors estimation (Arellano 1987; White 1984). Cluster-robust standard errors are obtained by relaxing the assumption of error independence and allowing for correlation within a “cluster” (e.g., observations coming for the same firm but in different years). Rather than assuming it is zero as in least squares analysis, cluster-robust standard errors are based on estimates of the residuals covariance within a cluster. The use of robust standard errors does not change the coefficient estimates, but it affects the standard errors and, thus, the t-statistic. Although the degree to which cluster-robust standard errors differ from OLS standard errors depends on the autocorrelation of the series and the number of time-series observations, in our experience with the approach using the market value series, autocorrelated marketing metrics, and ten years of annual data, it gave rise to cluster-robust standard errors approximately two to three times the size of the OLS standard errors (and, as such, t-statistics are half to one-third the size of the OLS t-statistics).

A limitation of using levels models with cluster-robust standard errors is that the analysis is based on the assumption that the firm-specific effects inducing autocorrelation in the residuals are uncorrelated with the explanatory factors. This assumption may well be violated. To the extent

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9Care needs to be exercised in distinguishing among cross-sectional, panel data, and time-series studies. The distinction is important because, for example, panel data studies that do not account for autocorrelation involve a different set of issues and biases than cross-sectional studies.
that firm-specific effects are correlated with the explanatory factors, the estimated coefficients will be biased and inconsistent. This suggests, for example, the need to take first differences to remove time-invariant firm-specific effects or to address the stationarity issue that S&H raise.

However, a concern with taking differences is that the effects of measurement error may be exacerbated (Griliches and Hausman 1986). That is, the “signal-to-noise” ratio tends to be lower for differentiated data than for levels data. (Depending on the nature of the measurement error, measurement error might actually be reduced by taking first differences.) Thus, the researcher is faced with the unavoidable task of choosing between omitted variable bias and measurement error bias. When the analysis is focused on assessing the information content of a specific metric, the measurement error concern becomes less of an issue. The research question in such studies is whether the metric is reflective of value-relevant information (i.e., whether shocks to the metric contain a signal sufficiently associated with financial market outcomes). When the analysis is focused on the information content of a construct (as reflected by a measure), greater ambiguity exists and the choice comes down to a levels model with cluster-robust standard errors versus a first-differences specification. In any event, levels models that ignore autocorrelated errors (a commonly used approach) are clearly an unacceptable option.

Although the econometric issues we discuss are well established, it is less clear-cut how the results from studies running levels models subject to spurious regression concerns should be treated. Because the estimated values may seem plausible, they are often given credence and are used to support a given theory. Although S&H claim that these levels models “have limited value,” they make use of the results from such studies to support their propositions. A problem with this approach is that propositions are assumed to be supported by valid statistical analyses, when they are not. Future research has a tendency not to question the studies that serve as the foundation for the proposition but rather assumes that the empirical work underlying the proposition has been adequately vetted. As a result, future research may not be building on a foundation as solid as might be presumed.

Indeed, there is a tendency for some studies to get misinterpreted over time to agree with a particular viewpoint. For example, counter to common interpretation and S&H’s discussion (p. 306), Ittner and Larcker (1998) do not find that “changes in customer satisfaction are associated with increases in abnormal returns.” Ittner and Larcker report that market value is associated with the level of customer satisfaction in cross-sectional analysis. However, they do not test, nor do they report, whether changes in market value are associated with changes in satisfaction. In a footnote, Ittner and Larcker report that they ran an event study linking abnormal return to the change in satisfaction, but they did not find statistically significant results. Yet it is common to interpret Ittner and Larcker’s findings as if they ran analyses based on changes, when indeed they did not.

As such, we differ with S&H on how to use results from levels models that do not account for autocorrelation (i.e., we place less credence on the findings). Our recommendation is more consistent with that advocated by Granger and Newbold (1974, p. 117), who state that if an equation is found to have strongly autocorrelated residuals “the only conclusion that can be reached is that the equation is misspecified.” Levels models that do not account for the autocorrelated properties of the series should not form the basis for a research study, manuscripts relying on these studies should not be accepted for publication, and the findings from these studies should not be given credence.

**WHY USE TOBIN’S Q INSTEAD OF STOCK RETURN?**

Srinivasan and Hanssens recommend Tobin’s q as preferable to the market-to-book ratio for empirical modeling of firm valuation. However, they do not articulate why Tobin’s q or the market-to-book ratio should be used instead of stock return for analyses that assess business performance. Although certain contexts (e.g., some forecasting situations) may warrant the use of a measure other than stock return (Mizik and Jacobson 2009), we suggest that for most applications—particularly those attempting to establish a causal link—it is more expedient and advantageous to use stock return as the financial performance metric. Because in most contexts it has superior properties, research not using stock return should explain why it makes use of an alternative financial market performance metric.

Although Tobin’s q is theoretically appealing, its use has limitations in empirical work. When a researcher takes into account its dynamic properties, analysis using Tobin’s q has characteristics similar to analysis based on stock return, albeit with constraints that may not be warranted. Furthermore, measurement error issues associated with calculating asset replacement value (the denominator in q) add a set of problems that researchers using stock return do not face. It is also the case that the properties of stock return have been more systematically studied and stock return is available at a higher periodicity. Although the use of stock return has its limitations (e.g., investor expectations may not be correct), Tobin’s q has these same issues. As such, we do not believe that there is any benefit to using Tobin’s q as compared with stock return.

Consider a Tobin’s q model of the following form:

\[
\log Q_\tau = \alpha_\tau + \beta X_\tau + \epsilon_\tau
\]

where q is the ratio of the market value of an asset to its replacement cost and X is a vector of variables of interest. As S&H, among others, note, Tobin’s q may have a unit root, which requires taking first differences of the data, or first-differencing may be necessary to control for the presence of a fixed effect \(\alpha_\tau\). The differencing yields the following:

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10Another part of their analysis involves assessing the link of abnormal return to the level of customer satisfaction (not the change in satisfaction). Although Ittner and Larcker (1998) report statistically significant effects, it is questionable whether this finding would have external validity (e.g., appeared in future periods) given the tenuous nature of this specification implying that investors expect all firms to have the same level of satisfaction.
To simplify the analysis, consider Equation 2 for a firm without debt. Then, Equation 3 can be rewritten as

$$\Delta \log Q_{it} = \beta \Delta X_{it} + \eta_{it}.$$  

To simplify the analysis, consider Equation 2 for a firm without debt. Then, Equation 3 can be rewritten as

$$\log(MktValue_{it}/Assets_{it}) - \log(MktValue_{it-1}/Assets_{it-1})$$
$$= \log(MktValue_{it}/MktValue_{it-1}) - \log(Assets_{it}/Assets_{it-1})$$
$$= \beta \Delta X_{it} + \eta_{it},$$

where Assets_{it} is the replacement value of firm i's assets at time t. Equation 3 can be reexpressed as

$$StkR_{it} - \text{AssetGrowth}_{it} = \beta \Delta X_{it} + \eta_{it}$$

or, equivalently, as

$$StkR_{it} = \text{AssetGrowth}_{it} + \beta \Delta X_{it} + \eta_{it}.$$

Unconstrained analysis of Equation 5 can be undertaken by estimating the following:

$$\Delta \log Q_{it} = \beta \Delta X_{it} + \eta_{it}.$$  

As such, Tobin’s q–based modeling, given its dynamic properties, can be viewed as a stock return model but with the effect of asset growth constrained to 1.00. To the extent that the constraint is valid, the Tobin’s q specification will be more efficient than the stock return model. To the extent that the constraint is not valid, the Tobin’s q model will be misspecified because of an unwarranted restriction. We are not aware of research investigating this issue, but we have reservations about the validity of the constraint.11

Q theory of investment (Mussa 1977; Tobin 1969) postulates that the equilibrium market value of an asset set composing a firm is equal to the replacement value of these assets. As such, asset growth may well have a unit correspondence with growth in market value (i.e., stock return). However, this need not be the case. Furthermore, in practice, empirical analysis does not measure replacement cost, because it is unobservable. Instead, it is typically proxied by the book value of physical assets. This neglects (1) the difference between book value and replacement value and (2) the role of intangible assets. As such, deviations of Tobin’s q from unity may reveal little about the extent to which market value differs from replacement value (which theoretically would stem from, for example, management quality or monopoly power); rather, it may indicate the degree to which asset replacement value is mismeasured.

Furthermore, the dynamic properties of empirical measures of Tobin’s q may not reflect the properties on the underlying theoretical construct. For example, the persistence of Tobin’s q may not be reflecting the persistence of “monopoly profits” but rather the persistence of measurement error. Measures of Tobin’s q may have properties more similar to the market-to-book ratio than to the theoretical construct Tobin envisioned. It is difficult to explain

11We are also not aware of research investigating another implicit constraint—the extent to which the components in the Tobin’s q ratio respond similarly to marketing stimuli. That is, does the market value of equity have the same properties as debt?

the vastly different dynamic properties prior research has assigned to Tobin’s q metrics. Some have modeled it as having a unit root, others have modeled it as an autocorrelated series, and yet others have modeled it as a white noise series. These unresolved ambiguities again point to the advantages of working with stock return, in which statistical properties are well established and modeling practices and findings tend to be much more uniform.

Finally, some researchers in marketing have incorrectly attached alternative interpretations to results obtained from stock return (Equation 6) and Tobin’s q (Equation 1) models, declaring the coefficients derived from stock return models “short-term” effects and the results obtained from Tobin’s q models “long-term” effects. This interpretation is misguided for two reasons. First, as we show, a simple transformation reexpresses Tobin’s q in terms of stock return. Because the interpretation of the structural economic relationships does not change with simple equation manipulations, the interpretation of the coefficient $\beta$ in Equations 1 and 6 also does not change. As such, the estimates and their interpretation should be identical. The reason for obtaining different estimates from Equations 1 and 6 lies not with the alternative financial market–based measure but rather from researchers’ failure to model the dynamic properties of the Tobin’s q series, which leads to biases in Equation 1 estimates. Second, all effects identified in stock return models are long-term or permanent effects. Because stock return is the first difference of market value and the underlying metric of market value is a unit root process, the effects are permanent (i.e., long-term) (see Dekimpe and Hanssens 1995, 1999).

**SUMMARY AND CONCLUSIONS**

We encourage further research to take into account the dynamic properties of financial measures and not to rely on results from previous analyses making use of levels models that ignore the effects of autocorrelation on the statistical properties of the results. We suggest that it would be more expedient for analyses to be based on stock return rather than Tobin’s q, which is subject to several unresolved issues associated with, for example, measurement error. Future analyses need to be clear whether they are assessing value relevance or financial market mispricing. Mispricing research, whether using unrestricted VAR models or other methods (e.g., calendar-time portfolios), is less likely to uncover empirical regularities because of the role of financial market participants in dissipating trading opportunities.

We commend S&H for reviewing and providing guidance for a research stream that does not have a firm foundation in marketing but will undoubtedly be a more important part of marketing research in the future. Some of our differences with points that S&H raise are not criticisms of their work per se, but rather are our reflections on the ongoing dialogue required for marketing to advance in using financial market data. We look forward to this dialogue.

**REFERENCES**

Marketing Issues in Corporate Finance

MARK J. GARMAISE*

Srinivasan and Hanssens (2009) describe a rich set of interactions between marketing and the study of asset valuation in finance. Ideas from marketing research can be applied to other areas of finance as well, such as the analysis of corporate financial policy. Marketing themes have increasingly been developed in recent work on the sale of financial securities, mergers and acquisitions, and capital structure.

THE MARKETING OF FINANCIAL SECURITIES

In the simplest model of corporate finance, firms choose which financial claim to issue and immediately sell it for its fair market value. However, it has long been recognized that there is a marketing component to the sale of securities by firms. An influential article by Ross (1989) argues that marketing plays an important role in providing information about new financial claims. In Ross’s model, an investment bank serves in part as a marketing network, and the role of the marketer is to explain the nature of the claim being sold to investors.

In any theoretical setting that departs from homogeneous investor rationality (e.g., those of behavioral finance), investors may have a variety of views on the attractiveness of different securities. In choosing which claims to sell, the firm is essentially designing a product for a market of consumers with a range of preferences. In behavioral models, therefore, the marketing and framing of financial claims is a crucial component of security design (Shefrin and Statman 1993). Studying the beliefs of investors is a form of market research for a firm that is planning to sell a security (Garmaise 2001).

The need for marketing is likely to be greatest in initial public offerings (IPOs), in which a firm seeks public equity investment for the first time. In practice, in the United States, an IPO is preceded by a significant marketing effort, including a road show of presentations to both institutional and retail investors and a book-building process, in which the investment bank that is leading the offering solicits bids and retail investors and a book-building process, in which the investment bank that is leading the offering solicits bids for shares and records them in an order book. Notably, the book-building process is increasingly popular in other countries, often displacing other sales mechanisms, such as auctions, soon after their introduction (Sherman 2005).

From a marketing perspective, the central role of book building in the IPO issuance process raises several questions. First, why has the book-building mechanism emerged as the most successful method of distribution, despite some evidence that other mechanisms may yield higher prices? Degeorge, Derrien, and Womack (2007) argue that book building may serve an advertising function. Do marketing

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tage of the road show and book-building process over more direct methods of selling shares?

Second, it is clear that underwriting syndicates play a key role in allocating the shares in an issue (e.g., Song 2004). What considerations help determine the best possible syndicate? For example, should a syndicate include only investment banks, or should commercial banks also be included? Is an underwriting syndicate simply an ad hoc distribution network for a single product, namely, the shares of an IPO? Marketing research on distribution channels in general can help inform the analysis of underwriting syndicates.

Third, what is the optimal way to conduct a road show? Which customers should be directly approached, and what means of communications are likely to be most successful? What features should a firm highlight in its presentations to investors?

Related to this final question is the issue of direct advertising for an IPO. This practice has become increasingly popular in several countries and suggests some important research questions. Which media are most effective for IPO advertising? What is an appropriate marketing budget for an IPO? Does the optimal IPO marketing strategy depend on the nature of a firm? In some initial work on these issues, Chizzoli, Mola, and Pace (2003) find that in Italy, there is a negative correlation between the fraction of shares sold in an IPO to institutional investors and the advertising expenditures made in support of the IPO. This suggests that firms believe that retail investors will be more influenced by a public marketing campaign. Thus, there is a relationship between the characteristics of a firm’s target shareholder base and the best strategy for marketing an IPO. An IPO is a crucial event in the life of a firm, and therefore developing a successful marketing approach for the IPO is a highly relevant issue (Cook, Kieschnick, and Van Ness 2006).

In addition to advertising, price promotions have played a role in several important IPOs—specifically, privatizations. Governments trying to garner political support for privatization programs often want to ensure that a large segment of the float of privatization IPOs is held by a broad base of retail investors (i.e., individual citizens) rather than by institutions. Keloharju, Knüfer, and Torstila (2008) show that specialized price promotions, such as bonus shares for retail investors and retail discounts, can promote participation by individual investors in privatization IPOs.

Not only can advertising be used to support an IPO, but an IPO can also serve the function of promoting a firm’s product. Demers and Lewellen (2003) find that underpricing (i.e., the IPO prices are low relative to the share price at the close of the first day of trading) in Internet stock IPOs drives subsequent Web site traffic. These complex interactions between finance and marketing would probably be best understood in an equilibrium analysis informed by insights from both fields.

MERGERS AND ACQUISITIONS

A primary motive for mergers and acquisitions is that the proposed combined firm may be able to exploit synergies between the assets of the merging companies. If, as Srinivasan and Hanssens describe, brand and customer equity are crucial components of firm value, it is important to understand the nature of potential synergies between marketing assets. Can brands be combined or used to support each other in a profitable manner? What are the spillover effects of combining two brands with very different levels of customer satisfaction?

The field of marketing provides insights into cross-brand elasticities, brand promotion strategies, and optimal pricing techniques for a group of brands. These ideas can help substantiate the somewhat abstract concept of synergies in theoretical corporate finance. How, in practice, might synergies arise? Work in marketing can provide answers.

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value (unlike, for example, for equipment or real estate, which might be more easily liquidated in the event of financial distress). Somewhat in tension with this conventional wisdom is the finding of Grullon, Kanatas, and Kumar (2006) that firms that change their investment in advertising do not subsequently change their capital structures; if brand assets are best financed by equity, it would be expected that firms that invest in advertising should shift to great reliance on stock financing. (Specifically, Grullon, Kanatas, and Kumar [2006] show that changes in capital structure lead to changes in advertising expenditures, but they find no evidence that changes in advertising lead to changes in capital structure.)

Therefore, more evidence on the question of how best to finance marketing assets would be useful. It is possible to liquidate brands in a bankruptcy setting, as the Chapter 11 sale of the Big Boy franchisor in 2000 demonstrates (Walkup 2000). Moreover, endogeneity issues may make it difficult to interpret empirical correlations between advertising and use of equity; for example, if a firm receives private information that its product is about to come under attack from a new competitor, it may choose to initiate a defensive advertising campaign at the same time that it seeks additional financing through an equity offering (to sell shares before the news hits the market). If this is a reasonable description of firms’ strategies, an observed correlation between advertising and equity issuance may not be driven by the optimality of financing marketing assets with equity but rather by the information issues jointly determining both marketing and finance strategies.

One approach for drawing causal inferences about the best way to finance brand equity would be to seek instrumental variables for changes in the value of a firm’s marketing assets. For example, the impact of the initiation or lifting of advertising bans (e.g., on tobacco or alcohol) on the capital structures of the affected firms might be studied. Another strategy would be to examine the impact of a firm’s good luck in a marketing campaign (e.g., the firm’s sponsored sports team does unexpectedly well in a major contest) on its subsequent pattern of financings.

Even if studies of this type sustain the argument that marketing assets are best financed with equity, it probably makes sense to distinguish among various types of marketing value measures. Are corporate branded firms financed differently from house-of-brands firms? Moreover, rather than only measuring the investment in marketing (e.g., advertising expenditures), new studies could use marketing metrics to estimate the impact of the actual value of a firm’s marketing assets (as a fraction of total assets) on its capital structure.

Marketing measures may also be helpful in assessing the severity of other financing frictions, such as the agency costs that arise from the different interests of managers and shareholders. For example, do firms with high customer satisfaction finance themselves differently? Is there a correlation between the quality of a firm’s corporate governance and its level of customer satisfaction?

Srinivasan and Hanssens show that marketing assets are a significant source of firm value. It is important to understand the best way to finance and manage investments in these assets.

REFERENCES


Marketing and Firm Value: Perspectives and Conclusions

SHUBA SRINIVASAN and DOMINIQUE M. HANSENS*

We are grateful for the insightful comments on our article (see Srinivasan and Hanssens 2009) provided by distinguished representatives of the accounting, finance, and marketing disciplines. In general, we are in agreement with the observations. In what follows, we select a few issues in each commentary on which we believe that we can either elaborate or offer a different perspective.

Garmaise (2009) brings to our attention three important subject areas in corporate financial policy that could benefit from a marketing approach. The agenda in his first area, the marketing of financial securities, is clear: This is a fertile application ground for innovative marketing techniques in this industry. Indeed, some of this has already occurred—for example, research on the pricing of financial instruments (DeSarbo et al. 1987). We agree with Garmaise that such studies can reveal departures of homogeneous investor rationality, which can highlight the power of marketing beyond that of the more traditional consumer product settings.

His second proposed area, mergers and acquisitions (M&A), strikes us as an even greater opportunity, and we encourage interested researchers to pay careful attention to his specific examples of important relationships between various marketing assets and M&A policy that are in need of further research. Given the high commercial failure rates in M&As—DaimlerChrysler and TimeWarnerAOL come to mind—such research may eventually identify the conditions under which marketing assets either favor or disfavor a merger or an acquisition under consideration.

Third, Garmaise draws attention to the question of optimal capital structure for the financing of brand assets. We are not aware of any marketing studies in this promising area, even though the proposed research methodology is well known to marketing academics. Existing simultaneous equation models between sales revenue and marketing investments (e.g., Bass and Parsons 1969; Dekimpe and Hanssens 1995) could readily be adapted to address the question of equity versus debt financing of these marketing investments.

Kimbrough and McAlister (2009) extend the scope of our review article in a different direction to that of “disclosure” or release of information on important marketing activities and performance metrics. Such a focus offers important implications for public policy—in particular, investor protection, which our review does not address. An important facet Kimbrough and McAlister cover is that of the limitations of publicly reported data, such as advertising spending in 10-K reports. In marketing, the data sources are typically of much higher quality, in part because they are collected and sold privately by highly experienced suppliers, such as ACNielsen and TNS Media Intelligence. We propose that using such data sources instead of the publicly reported numbers will go a long way toward solving the “lack of transparency” problems to which the authors allude.

Kimbrough and McAlister also point out correctly that unlike earnings announcements and other discrete events, marketing phenomena evolve more gradually, and thus their impact on valuation is more difficult to detect from event studies. We view this phenomenon as an opportunity to use more sophisticated methods in marketing dynamics that are already in use in the sales response literature. For example, Kalman filters or dynamic linear models are well suited to represent the evolution in slow-moving marketing assets, such as quality reputations and brand equity (e.g., Ataman, Mela, and Van Heerde 2008; Osinga et al. 2009). In turn, these can affect firm value because they reduce the investor’s risk. At this juncture, we do not know whether slow-moving but steady changes in these fundamental value drivers are adequately reflected in stock prices. If research shows that they are at least gradually incorporated, this would enable analysts and investors to be less sensitive to quarterly earnings expectations and realizations, which may lower stock price volatility and increase the public’s confidence in capital markets.

Finally, in line with the work of Chaney, Devinney, and Winer (1991), Kimbrough and McAlister note that most marketing actions are too small to affect corporate valuation. Although this argument has some face validity—especially for large, highly diversified companies—recent empirical evidence suggests there are many exceptions. In the automobile industry, specific marketing events around certain brands (e.g., major or minor product innovations) have been found to affect stock returns of the larger automotive corporation. Some of these reactions are “incomplete” (e.g., it takes several weeks for the event to be fully absorbed in the stock price), which is another area of research to which the authors point. If such brand-level findings can be replicated in other industries, it may suggest that the marketing–firm value connection is even stronger than we currently recognize.

Mizik and Jacobson’s (2009) commentary is from within the marketing discipline. They suggest that persistence modeling techniques, such as vector autoregressive (VAR) modeling, have limited application in the context of identifying marketplace anomalies for two reasons: limited data availability on marketing metrics at high frequency and the potential absence of lagged effects in VAR models. We share their concern regarding high-frequency data, but we expect that with improved availability of more detailed marketing databases (e.g., hourly data on advertising and sales), high-frequency VARs will enable more marketing applications in this domain (for a discussion on the econometrics of high-frequency data, see Engle 2000). High-frequency VARs are already in use in financial markets research (for a survey, see Engle and Russell 2009) and in neuroscience research (Harrison, Penny, and Friston 2003), in which observations are generated in millisecond intervals. Regarding Mizik and Jacobson’s point about the absence of lagged effects, we reiterate our statement (p.

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difficult because their key constituencies have different motives and behaviors. In particular, investors act fast and operate mainly in expectations space (i.e., they continuously discount the expected future value of a marketing decision into the present). In comparison, customers act more slowly, often preferring present realization or past reputation over future expectation. As a result, the investor community faces the challenge of how to make accurate projections of future customer response to current marketing actions and how to accurately assess the impact of intangible marketing assets, such as brand equity. In turn, marketing executives face the challenge of convincing investors that their expenditures are indeed investments and will result in higher returns and/or lower risk. When this mutual understanding is lacking, suboptimal behavior occurs—for example, when investors view marketing as a cost factor that needs to be minimized or when marketers take actions that lift only short-term performance because they do not trust investors to have a long-term view.

High-quality research on the marketing–firm value interface will build this mutual understanding. We hope that this review and set of commentaries will be a catalyst for new contributions that increase the understanding of this complex and important relationship.

REFERENCES


While their arguments center on estimation issues related to panel VARs, our discussion focuses on systems representations in general.

Overall, the essence of our discussion in favor of persistence models such as VARs, based on either panel data or pure time-series data, arises from our belief in the value of a systems view. Indeed, there are several stakeholders involved in the marketing–finance interface, and a systems approach enables the tracking of the behavior of each: consumers (demand equation), marketing managers (decision rule equation), corporate boards and accounting overseers (income equation), competitors (competitive reaction equation), and ultimately investors (stock price equation). Not surprisingly, systems models are already in use in financial markets research. For example, Campbell and Shiller (1988) use a VAR model of stock price, earnings, and dividends to assess the relationship between accounting earnings and stock returns, and Vuolteenaho (2002) uses a VAR model of stock returns, book-to-market ratio, and profitability to assess the question of what drives firm-level stock returns. Avramov (2004) and Chen, Lung, and Wang (2009) use VAR models in the context of asset mispricing.

We also agree with Mizik and Jacobson’s recognition of the limits of levels models, as we state on pages 299 and 300 of our review, “models based on the EMH must recognize that investors react only to new information, which is operationalized as the difference between the actual and the expected level of the independent variable. As such, models based solely on these levels ignore the distinction between unexpected changes and expected levels of marketing actions and thus have limited value.” Mizik and Jacobson provide a useful summary of the statistical problems with the use of models in levels, which have been formulated over 30 years ago but are often ignored. In addition, the use of cluster-robust standard errors is an important new development. More important, cointegration and vector error correction models, address the issue of spurious regressions by taking into account the long-term equilibrium relationships. These models continue to receive attention in finance and macroeconomics (for an in-depth discussion, see Juselius 2006). Illustrative finance applications of cointegration include Ang and Bekaert (2007) and Yogo (2006), and applications of vector error correction models include Lettau and Ludvigson (2001) and Vuolteenaho (2002), among others.

Mizik and Jacobson also articulate the relationship between stock returns and Tobin’s q and argue that the former is a better financial market metric than the latter. This reiterates the main points in our discussion in Table 2 on characteristics and limitations of various stock market metrics, in which we note various limitations of Tobin’s q and conclude that there are no obvious limitations to using the stock return metric.

In conclusion, capital markets serve society by directing scarce financial resources to their most productive use. Marketers serve society by creating, communicating, and delivering value to their customers. Ideally, these two forces will complement and reinforce each other, but this is


